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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/535,298
Filing Date: May 17, 2005
Appellant(s): MERTENS ET AL.

Edward W. Goodman
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 2/18/10 appealing from the Office action
mailed 10/9/09.

(1) Real Party in Interest

The examiner has no comment on the statement, or lack of statement, identifying by name the real party in interest in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The following is a list of claims that are rejected and pending in the application:

Claims 1-10 are rejected and pending.

(4) Status of Amendments After Final

The examiner has no comment on the appellant's statement of the status of amendments after final rejection contained in the brief.

(5) Summary of Claimed Subject Matter

The examiner has no comment on the summary of claimed subject matter contained in the brief.

(6) Grounds of Rejection to be Reviewed on Appeal

The examiner has no comment on the appellant's statement of the grounds of rejection to be reviewed on appeal. Every ground of rejection set forth in the Office action from which the appeal is taken (as modified by any advisory actions) is being maintained by the examiner except for the grounds of rejection (if any) listed under the

subheading "WITHDRAWN REJECTIONS." New grounds of rejection (if any) are provided under the subheading "NEW GROUNDS OF REJECTION."

(7) Claims Appendix

The examiner has no comment on the copy of the appealed claims contained in the Appendix to the appellant's brief.

(8) Evidence Relied Upon

7,138,575	CHILDS, Jr. et al.	11-2006
7,167,567	SIBBALD et al.	1-2007

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim 10 is rejected under 35 U.S.C. 101 because the claim is not to a process, machine, manufacture, or composition of matter. The claim specifies "a computer-readable storage medium". However, the specification as amended discloses that a data carrier in the form of a computer-readable storage medium storing the computer program (p. 1), the software program having previously been stored on a data carrier in the form of a computer-readable storage medium, or the software program having been previously transmitted to the computer over a signal transmission system (p. 13). In the state of the art, transitory signals are commonplace as a medium for transmitting computer instructions and thus, in the absence of any evidence to the contrary and given a broadest reasonable interpretation, the scope of a data carrier in the form of "computer readable storage medium" covers a signal per se. A transitory signal does

not fall within the definition of a process, machine, manufacture, or composition of matters.

Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Childs, Jr. et al. (hereafter Childs) (US007138575B2) in view of Sibbald et al. (hereafter Sibbald) (US007167567B1).

Regarding claim 1, Childs discloses a data representation apparatus for representing data by means of an audio signal, said data representation apparatus comprising:

an audio processing unit for delivering the audio signal with a characteristic dependent upon a positionless data (Childs does not limit the data to any particular field) signal having at least a first value and a second (e.g. Fig. 8B illustrates that the positionless data can be any value between the Max and the Min).

Childs fails to show "a mapping unit for mapping the first value of the positionless data signal to a first position in a three-dimensional space around a user's head, and the second value of the positionless data signal to a second position in the three-dimensional space, wherein the audio processing unit changes the characteristic of the audio signal, resulting in the audio signal appearing, to a user listening to the audio signal, to originate from the first position when the positionless data signal has the first value, and from the second position when the positionless data signal has the second value."

Childs suggests that the positionless data (such as medical data as discussed on col. 2, lines 1-2; stock market data as discussed on col. 2, line 6) could be sonified by using different sound parameters (col. 4, lines 64-67) to expand the user's understanding of the positionless data (col. 1, lines 56-67). As illustrated in Fig. 3, the positionless data is mapped to the corresponding sound parameters. In particular, Childs suggests that more advanced sound spatialization and localization techniques including HRTF processing can be used (col. 11, lines 18-23). One skilled in the art understands that spatialization and localization involve the perceived sound position. Without providing any specific detail, one skilled in the art would have been motivated to search for the related art. Sibbald teaches a device that uses HRTF to render the 3-dimensional sound at positions around the listener (col. 2, lines 26-37). Thus, it would have been obvious to one of ordinary skill in the art to modify Childs in view of Sibbald by utilizing HRTF in order to provide 3-dimensional sound imaging representing the positionless data around the listener.

Regarding claim 2, Sibbald teaches that the audio processing unit comprises a filter for applying a head related transfer functions to an input audio signal to obtain the output audio signal appearing to originate from the first position and the second position (Fig. 8).

Regarding claim 3, Childs teaches that said data representation apparatus further comprises a data signal distributor (the line connecting 12 to 14) for delivering the positionless data signal, derivable from a measurement from a measurement device (12), to the audio processing unit.

Regarding claim 4, Childs teaches how to map a collection of nominal values of the positionless data signal to predetermined regions of three-dimensional space (Fig. 10B). By modifying Childs in view of Sibbald, the three-dimensional space would be the space around the listener.

Regarding claim 5, Sibbald teaches positions on a curvilinear locus in three-dimensional space. By combining Childs and Sibbald, the limitation of "maps a collection of numerical values of the positionless data signal to positions on a curvilinear locus in three-dimensional space" is met.

Regarding claims 6 and 7, Childs teaches that said data representation apparatus further comprises selection means for enabling presentation of a first set of data signal values by a first type of the audio signal and a second set of data signal values by a second type of the audio signal (col. 4, lines 39-60 and col. 6, lines 50-58).

Claim 8 defines an apparatus which corresponds to claim 1 as discussed above with respect to Childs and Sibbald.

Claim 9 defines a method which corresponds to claim 1 as discussed above with respect to Childs and Sibbald.

Regarding claim 10, Childs teaches a computer-readable medium (col. 3, lines 22- 35).

(10) Response to Argument

(A) Whether claim 10 is Non-Statutory

Appellant argument is not persuasive. The specification as amended does not exclude the claimed computer-readable storage medium from a transitory media. Since

the specification provides an open-end definition on the claimed computer-readable storage medium, it is reasonably concluded that the claimed computer-readable storage medium can be a transitory signal.

(B) Whether Claims 1-10 Are Unpatentable Over Childs, Jr. et al. In view of Sibbald et al.

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

On p. 16, appellant agreed that Childs, the primary reference, contemplates the use of the headphones and acknowledges some of the capabilities of headphones, such as sound spatialization and localization techniques using HRTF. Appellant further agreed that Sibbald, the secondary reference, shows such capability of headphones using HRTF. Therefore, it is within the level of ordinary skill in the art to follow the suggestion in Childs to combine the specific teaching in Sibbald in order to map the first positionless data to a first position in a three-dimensional space around a user's head, and to map the second positionless data to a second position in a three-dimensional space around the user's head.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

pwl

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